

Abstract

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A method for eliminating eruptions, impurities, and/or damage in the crystal lattice by selectively etching silicon elements, in particular of surface-plated and sawn-out parts of a silicon wafer. At least areas of the silicon elements are brought into contact with a gaseous etching medium that etches silicon selectively in a chemical reaction. Gaseous reaction products are produced during etching. An interhalogen or fluorine-noble gas compound that is in a gaseous state or was converted to the gaseous phase is particularly suitable as the etching medium. The proposed method is especially suitable for producing power diodes sawn from a wafer or for overetching fully mounted individual diodes.

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